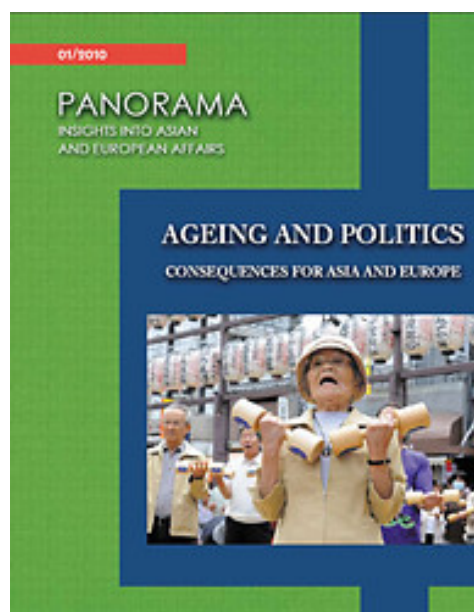


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# Impact of Ageing for Social and Political Processes in Spain

*Julio Pérez Díaz*

## ABOUT SPANISH DEMOGRAPHY

Spain is one of a group of European countries also called “Mediterranean”. This label, in demography, means “backward”, and a simple example may illustrate the reason. To make up for the frequent lack of empirical data, international models of mortality tables were created in the mid-20th century (Coale, Demeny and Vaughan, 1966). The Mediterranean model was then characterized by a low life expectancy, and very affected by high infant mortality rates. In 1900, life expectancy in Spain barely reached 34 years of age, and was the lowest of the continent, with the exception of Russia. Its main problem was high infant mortality, which was around 200%.

Limited survival logically required higher fertility than the whole of Europe. The combined effect was little population growth and a very archaic age structure, with nearly a third under 16 years old and only 4% over age 64 (Livi Bacci, 1968).

But the 20th century, and especially its second half, has completely changed the traditional situation, and Spain is now among the countries of the world with the highest life expectancy and lowest fertility, a combination that results in rapid population ageing. Generally, this evolution of the age pyramid is viewed with fear (it is symptomatic to talk of its “impact”). It is thought to cause social stress and political and economic problems. This article, written by a demographer and from a demographic point of view, will hold a very different position.

## THE “POPULATION AGEING” CONCEPT

This concept bears clarifying before proceeding. It is an unfortunate name that creates widespread misunderstandings, which results in many of its alleged consequences being simply myths.

Back in the early decades of the 20th century, when such a process was beginning to be noticed in the most developed countries, the reaction was of alarm and rejection. It was associated with Western decline or national degeneration, topics that were in style at that time (Spengler, 1918). Organicism and Darwinian biologism applied to

societies led to the belief that populations were like living beings, that are born, mature and also grow old and die (Gini, 1930).

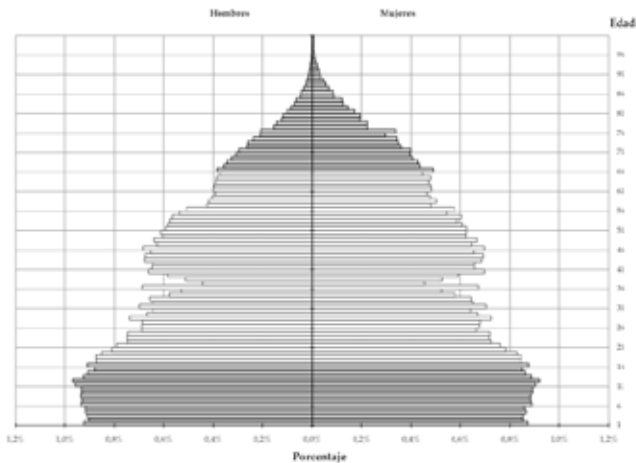
But populations do not age, they do not grow old, they do not have an age, and we have had a century to see that the foreseen “decline” was a fallacy. What populations do, as they modernize, is modify their composition (their age structure), in a process whereby the traditional profile of the population pyramid is narrowed at the child and youth base, while gaining weight in favour of mature and advanced ages, which were so rare in the past. The conceptual trap implicit in the term “population ageing” is a legacy of which we have not yet divested ourselves, and which continues exerting its biased influence.

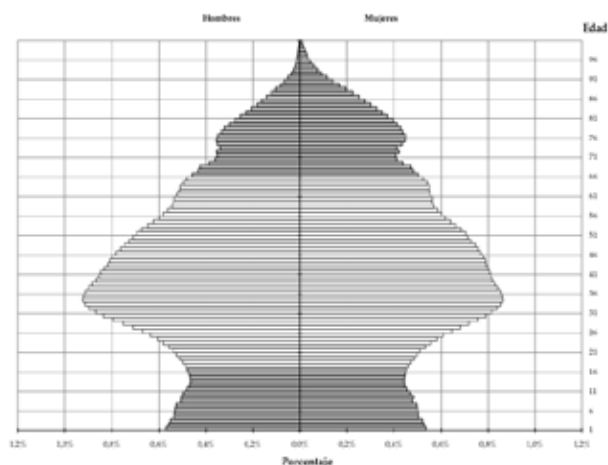
That which is “old” still has negative connotations, so the ageing of the population cannot be good. But the theoretical foundations of such prejudice are easily refutable, and the historical reality doubly disproves it. It was important to start clarifying it, because the Spanish population is experiencing this trend with unprecedented intensity and speed, and the process is far from having reached its end.

## THE CHANGE OF THE PYRAMID

The proportion of people over age 64 is increasing in Spain. It increased from 10% to 17% between 1975 and 2010, and will still increase substantially in coming decades. But it would be a mistake to think that the normal population is what it was in 1975.

The pyramid of 1975 shows how the civil war (1936-1939) and the low birth rate it caused left its mark on the limited number of people with ages around 25-30. Something similar happened in Europe with World War II, although this was some years later. But unlike the other European countries, Spain did not recoup its birth rate with the end of the war. The dictatorship and international isolation were accompanied by two decades of misery and few births, despite the state’s official pronatalistic policies.





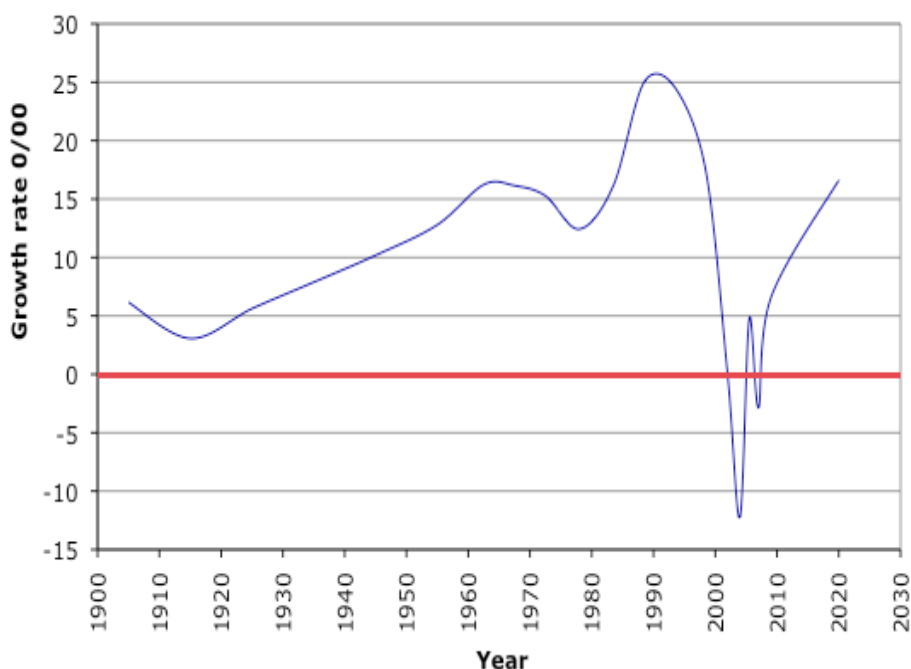
Graph 1: Spain Population Pyramids 1975 and 2010.

Source: INE, Census Registry 1975, and 2010: INE *Estimates of Spain's Current Population* (January 1).

The pyramid of 1975 is abnormal due to the extraordinary age 0 to 14 base, which is a result of the delayed baby-boom of the 1960s and which actually ended in 1975.

The 2010 pyramid is not “normal” either. It shows the pronounced baby-bust, after 1975 that lasted 20 years. But also, the weight of the central adult ages, the most abundant, has swelled even more due to an extraordinary flow of immigrants, unprecedented in a country which until now had been traditionally emigratory (Arango, 2004). We are thus faced with the results of a very intense fluctuation in the weight of children's ages, first upward and then downward. It would be wrong to draw conclusions only from these two pyramids with regard to the causes of population ageing in Spain.

In reality, the proportion of adults aged 64 and above has always grown throughout the 20th century. What can be observed in that historical constant are different rates.

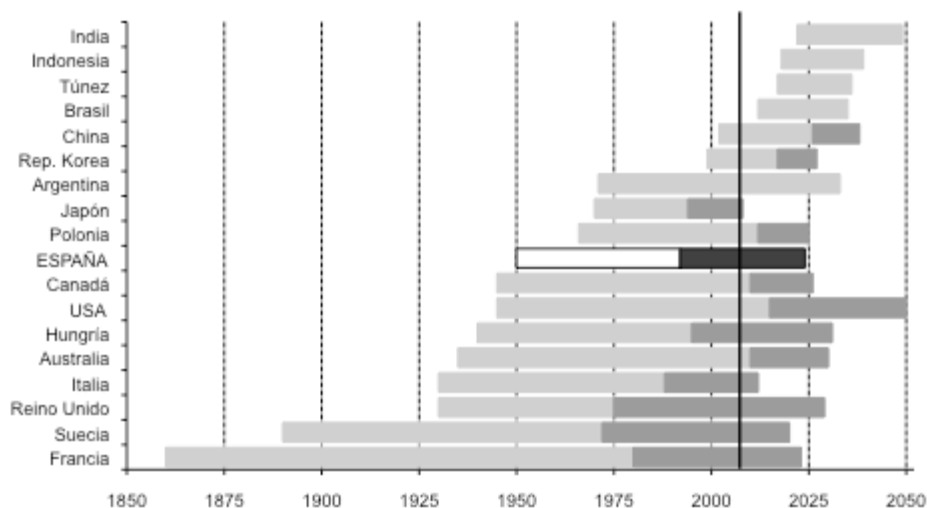


Graph 2. Aged Population's Annual Rate of Increase. Spain 1900-2025.  
Source: INE, Census, Demographic Patterns and Forecasts.

After the extraordinary surge in the process during the baby-bust of the late 20th century, in the last decade there was a reversal in the trend for the first time. But it was a mirage. What caused it may have been the very high immigration of young people, along with a moderate upturn in birth rate, as well as the retirement of the meagre generations born during the civil war.

The mirage, nevertheless, quickly dissipates. The recent economic crisis has slowed immigration, as well as marriages and birthrates, but additionally the generations born in the 1950s and 1960s will now start to retire, and the adult weight will again grow significantly over the whole, exceeding 20% probably within the next 15 years. This is not a circumstantial and passing trend, nor is it a rarity; the same can be seen in practically all developed countries. The main differences have got to be looked for in the historical moment in which the process began and the point where it currently is.

The paradigm of early onset and gradual process is France, where mortality and fertility began to descend very early. By 1860 its adult population had reached a weight of 7% (while Spain did not reach until 1950) and it has taken 120 years to raise it to 14%, which happened in Spain in just three decades.



Historical Moment When Adults Over 64 Reached 7%, 14%, and 21% of the Population. Spain and Several Countries of the World.

Source: Based on the idea of Mirkin and Weinberger (2001), updating the information with the UN's *World Population Prospects: The 2006 Revision*, in its median hypothesis, and dates for INE in Spain.

Notes. (1) The black vertical line separates real and projected data. (2) The ends of the horizontal bars indicate the time when the three percentages mentioned in the graph's title are reached: 7% on the left end, 14% where the colour changes, and when 21% will be reached is on the far right end. (3) Some countries will not reach 21% before 2050, and has been drawn without the second segment.

There is a widespread belief that Spain is one of the most aged countries in Europe and the world, which is a false idea formed in the late 1990s, when the pace of population ageing was the most accelerated. At that time the population projections, if trends were prolonged indefinitely, effectively ended with Spain beating adult population records over a period of half a century. But the trend projections are simple exploratory tools, not predictions, and it is well known by demographers that trends behave cyclically, and not in a linear manner. Currently, the adult weight in Spain is very similar to that of Europe as a whole, and less than that already reached in large-weight countries like Germany or Italy. The extraordinary drop in the birth rate that began in 1975 bottomed out in the mid-1990s, to later reverse over more than a decade.

In short, if what is being done is to observe the process of Spanish population ageing in an international context, Spain is late, but fast. It could be said that it is a “second wave” country, like Japan and Poland, but very advanced compared to those who joined this wave of change only after the second half of the 20th century. Some of these have not even reached 7% yet, though they evolve in that direction and such a proportion of adults is foreseen in the near future. These are countries of America, Asia and especially Africa, which share late and poor economic and social development.

## THE CONSEQUENCES

This change in the population pyramid has consequences in all areas of society, so they should be distinguished separately. There are automatic demographic consequences, which in demography is known as “structural effects”.

- Feminization: the ancient difference in mortality between men and women makes their numerical relationship increasingly unbalanced in favour of women, as the population ages. In Spain, there are twice as many women around age 80 as there are men. In an old pyramid this was not too important to the overall relationship between both sexes in the whole population. But with the new pyramid caused by population ageing, by increasing the weight of older adults, women are the ones who gain more presence. Today, women aged 65 or older already make up one-tenth of the total Spanish population.
- Overageing: As survival to early old age becomes more generalized, the number of people also reaching a very advanced age increases. Given that in the past survival to these ages was very rare, now they are the ones growing the fastest.
- Increase in Disabilities and Dependency. Since health problems are directly related to age, population ageing increases its collective presence. In a country with an underdeveloped welfare state and very few supported by family solidarity, the growing weight of dependent care has had to be addressed as a matter of state. In 2006, the “law of dependence” has literally created a fourth “leg” of the Spanish welfare state, along with health, education, and pensions.

There are many other socio-demographic areas in which the reconfiguration of the weight of the different ages produces automatic changes. Forms of cohabitation and household structures change with age, so the new pyramid itself implies greater weight to those who characterize ageing (Sánchez Vera, 1996). This factor is important, for example, in reducing the average size of Spanish households as a whole.

Typically, these changes are viewed with fear and, in fact, are often used to foresee serious problems in social and political areas as important as old age pensions, health-care, care giving by relatives, or labour market competitiveness. Population projections virtually guarantee that in just two decades Spain will have its record share of older people when the central baby boom generations retire, exceeding  $\frac{1}{4}$  of the total population.

The problem with projections is that they predict changes in a variable “with the rest of the conditions remaining the same”; meanwhile in this case we are dealing with a change, that of the population pyramid, which is impossible without changes occurring in many other conditions. Actually, the problems of population ageing have been incorrectly predicted for practically a century. Sometimes the insistence on alarms becomes ridiculous, because their founders age and die, and it is inherited by their disciples, and

the predictions are never borne out. One good example of this is the trend started in France in the middle of the pronatalistic fever by demographers like Sauvy or Boverat, and maintained by their student Gérard-François Dumont, coining the successful concept of “Demographic Winter”. Dumont, in turn, has aged while maintaining his speech unchanged (Dumont, 1979, 1995), and which reality has disproved for almost one hundred years.

A good way of tracking how the rest of the conditions surrounding the age structure have changed is to notice the characteristics of the generations turning age 65: the “new old” Spaniards, long overdue with respect to what happened in other developed countries, are revolutionizing the traditional sociological profile of old age. Recently turning age 65 are the first generations to achieve full schooling, the first to have an adult and working life uninterrupted by war, the first in which the majority was no longer of rural origin or working on a farm, and the first who enjoyed mass consumption of products such as cars or appliances.

That is why it is important to understand what makes up the spectacular international modernization of population dynamics, because the ageing of the pyramid is only one of its expressions.

## THE REPRODUCTIVE REVOLUTION

Actually, the pyramids are not the only things changing. The overall demographic systems have been changing for two centuries. It is not a progressive reform throughout human history, but an authentic revolution.

Faced with the Demographic Transition Theory, which describes the change but is unable to explain its causal mechanisms, several authors have been proposing an alternative theory for some years, the *Theory of the Reproductive Revolution*<sup>1</sup>. We believe that what developed countries have achieved, and what practically all the others are on track to achieve, is a qualitative leap in the efficiency of their demographic systems.

The analogies that general system theory provides are very useful here. Any open system, whatever its internal organization, endures over time by avoiding degradation and entropy. To that end, it includes external elements of limited duration that must be renovated, like human populations. “Demographic systems” feed on births and immigration, and maintain populations over time even though its members, human beings, inevitably die.

The greater or lesser efficiency of a system depends on the relationship between the results it achieves and the quantity of “input” required. Seen this way, human populations have always been very inefficient. In order to stay in existence, they needed a prodigious amount of births that, for the most part, never reached fertile ages. They

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<sup>1</sup> Research with the support of Ministerio de Ciencia e Innovación, VI Plan Nacional de I+D+I, 2008-2011, Ref: CSO2009-11571.



were like a combustion engine that burns a lot of fuel, but loses a large part of the energy produced without converting it into work.

The many children and the short life gave shape to the pyramid. It was very wide at the base, narrowed rapidly, and the mature and advanced ages had scarcely any weight. They were “young” pyramids. But they also determined the gender relationships, family organizations or resource and care flows between the different generations present. Life was difficult for human beings until recently.

In some parts of Europe, in the late 18th century, things began to change. For various reasons, high and unfortunate mortality, typical of all previous human history, began to decline. Population growth began to rise. Population pyramids became even younger again, because infant mortality was the first thing to improve.

Only when survival improvements were strengthened did reproductive behaviours react adaptively, as fertility started the decline that led to the current very low rates.

The Demographic Transition Theory has been criticized as a mere empirical generalization with no explanatory power (Caldwell and Caldwell, 2006). But it describes a far-reaching change for humanity. If it laid aside its conception of populations as mere stock (conception based on common annual and simultaneous death and birth rates), and dealt with the reproductive changes among generations, it would make full sense to speak of the greater or lesser efficiency of population reproduction. This is what we do with the Theory of the Reproductive Revolution (MacInnes and Pérez Díaz, 2009).

In our theoretical proposal, the reproductive revolution is only one of the “productive revolution” that is achieved by humanity in a continuous process of modernizing innovations, and has gained so much momentum since the industrial revolution. It is a question of a large-scale leap in efficiency with which human beings, in this case, are “produced”.

From a strictly demographic point of view, this efficiency begins to increase when generational survival is “democratized” (affects the majority) until certain ages that represent important thresholds for population reproduction: first, it is essential to ensure survival of the majority until it reaches fertile ages; then, it is equally important to extend survival until middle age, living long enough to complete the parenting of the children, which I have elsewhere called the “maturity of the masses” (Pérez Díaz, 2003b). Although these are “targets” that are apparently limited to the field of mortality, it is crucial to achieve them in order to dramatically increase the overall efficiency of reproductive systems.

In all of human history prior to the reproductive revolution, only a small fraction of births lived long enough to be able to have their own children. The majority died much earlier. In more quantitative terms, the mortality rate was always above 200% in the first year of life, and the initial strength of each generation continued to erode very quickly in later childhood. Fifty per cent had died long before their early reproductive ages.

Under such conditions it is clear that the fertility of minority survivors had to be high, well above the two children per woman theoretically needed for generational replacement. And despite such high fertility, the result was very poor in terms of population reproduction, with a population growth rate of practically zero. The “inefficiency” of the system here literally makes a lot of sense. Much is invested and very little is gained.

Therefore, the traditional young pyramids accompanying all of human history, with a large child presence, very short of adults, and practically no elderly people, may seem like “normal” pyramids and are most familiar and known to us, but in reality until a few decades ago have been a simple expression of reproductive delay and inefficiency.

Reproductive efficiency conditions other areas of social relations, starting with gender relations. In the past, women’s reproductive effort was of such intensity that it was their main occupation and the definition of the ancestral core of their own femininity.

Also vital projects and collective enterprises were affected. Individuality of life interests and choices were almost meaningless, because the isolated individual was not able to succeed.

Similarly, forms of cohabitation were rigidly restricted. The maximization of descendants was always achieved in a precarious balance with available resources that were scarce and unstable, thus generating extensive and complex family formations. Couples had neither the means nor sufficient safety to address the reproductive “endeavour” alone and, moreover, other household structures were hardly avoidable, given the high probability for any of the adults in families dying “early”.

All these are structural conditions that change when survival begins to become widespread. The democratization of life until youth ages is in itself a factor of reproductive success (populations grow faster, with the same number of births, if their “tenants” stay longer.)

Democratization of life until middle age is another efficiency threshold because it allows raising one’s own children better and because it is a success that feeds itself: by increasing the proportion of each generation that can have children, the number of children each should have can decrease to ensure the same population volume. The job of having and raising the next generation is distributed better and among more people.

Having fewer children and in better conditions closes the “virtuous circle”, because the new generations that are better cared for and looked after live even longer. A circularity of response factors leads to the current successful and efficient population dynamics. And, of course, to an entirely new population pyramid.

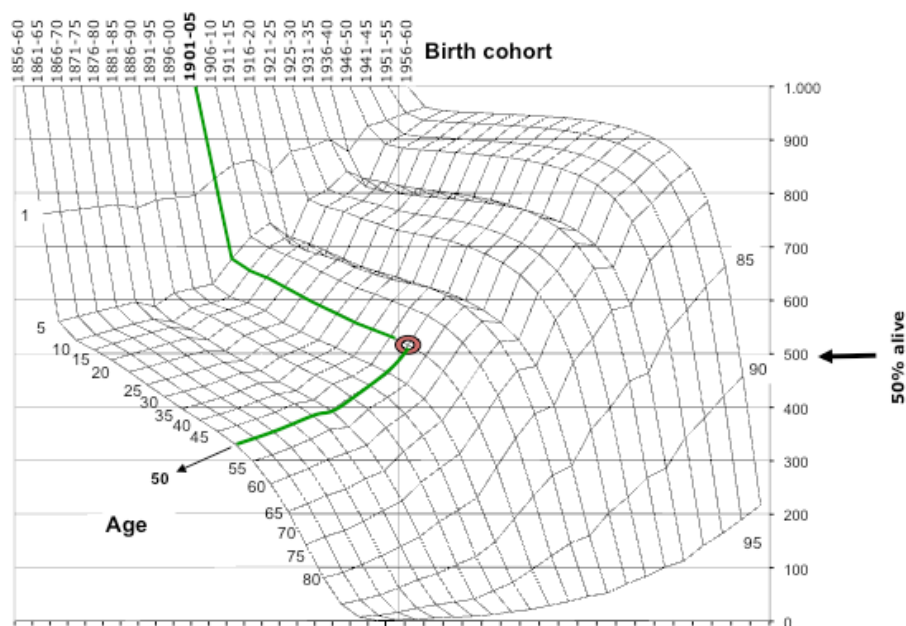
## AGEING AND REPRODUCTIVE REVOLUTION IN SPAIN

Spain seems to be an extreme case of rapid population ageing caused by the baby-bust of the 1980s and 1990s. But it must be remembered that its demography is just

as extreme in everything that concerns the modernization process outlined above. At the start of the 20th century, life expectancy did not reach age 35 (many European countries were already around age 50), but a century later, at over age 80, it is among the highest in the world.

Generational improvements in survival have been spectacularly speedy. That is the only explanation for the reproductive efficiency finally achieved, and therefore, the possibility of reducing fertility to extremes never before seen. It is this generational survival, and not that of isolated ages at each moment, which should be observed if we are to understand its impact on complete life cycles.

“Maturity of the masses”, the threshold mentioned by which the majority of the generations are able to survive up to age 50, is achieved in Spain for the first time in the female generations born between 1901-1906—women who were age 50 in the second half of the 20th century.

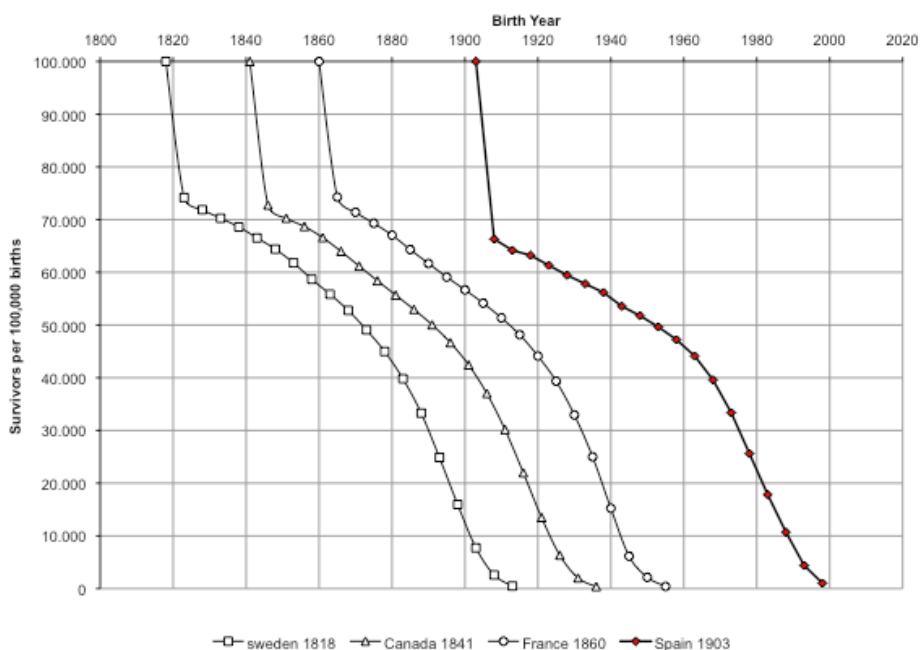


Graph 3: Survival curves, Spanish Female Generations 1856-1960, emphasizing the first mass maturity birth cohort.

Source: Drawn with data from (Cabr  i Pla 1989).

The delay in reaching this reproductive efficiency threshold is transmitted to many other features and behaviours, and gives a new explanation to the different international “social modernization” rhythms. Much has been speculated in Spain about the historical or cultural factors that explained the earliness of some Nordic or Anglo-Saxon countries to adopt the new family or couple formations. This is what today is known as the Second Demographic Transition. Sweden’s low fertility and high female employ-

ment contrasted with the archaic Spanish patterns still in the 1970s, and explanations were always sought in its political, ideological or cultural peculiarities. At the least, it is surprising that hardly any importance was given to the earliness at which the first Swedish generations were able to democratize survival to critical age thresholds, with its consequent effect on reproductive efficiency, compared to the Spanish delay in this crucial area of its population profile.



Graph 4: First Mass Maturity in Four Countries (female birth cohorts): Sweden, Canada, France and Spain.

Source: (Pérez Díaz 2003b).

Any basic demographic analysis manual explains that overall fertility indicators are an instrumental fiction. They construct a hypothetical generation of women free of mortality and tell us how many children they would have if, throughout their life, they were having children at each age with the same intensity that women have had in each age over the course of any given year. But that deliberately ignores how many women of that hypothetical generation would have survived from birth to puberty, or how many would die during their fertile years, or how long they would live after being mothers, or how long the children they brought into the world would live. Demography “analyses” and separates fertility in its “pure form” from the rest of the other determinants that affect reproduction, especially mortality.

Spain provides good examples of the difference between fertility and reproduction: the generations of women born between 1871-1875 had more than 4.5 children per woman, but their generational reproduction barely exceeded replacement (one daughter

per woman born in her mother's generation). With improved survival, the generations of 1936-1940 achieved the same rate of reproduction, but with almost two children less per woman (2.6). This is what I described above as greater reproductive efficiency, and is the reason why Spain, after the scarce growth of the 19th century, and after a 20th century of steady decline in fertility, has gone from 18 million to over 40 million people.

In short, then, population ageing is no more than the result of a better way to maintain human populations, with a much more efficient yield for each new life brought to the world. From the standpoint of the demographic transition, it may seem like just a by-product, an unintended consequence; from the standpoint of the reproductive revolution, it is an essential part of the process, a part of it.

The decline in fertility is explained in this context, at least from a long-range historical standpoint. We are too focused on the small differences, of tenths sometimes, in the fertility of the more developed countries, and too often we search for explanations in extra-demographic and cultural determinants. But the modernization of fertility and age structure are not a circumstantial or accidental issue, or the result of recent tax or family policies, housing prices, labour market conditions, or relationship patterns between young people today.

They are a result of a large-scale change in the survival and reproduction of human beings, that will still become more pronounced in coming decades, and that leads us irreversibly to a new population equilibrium typical of the wildest prophecies.

## CONCLUSIONS

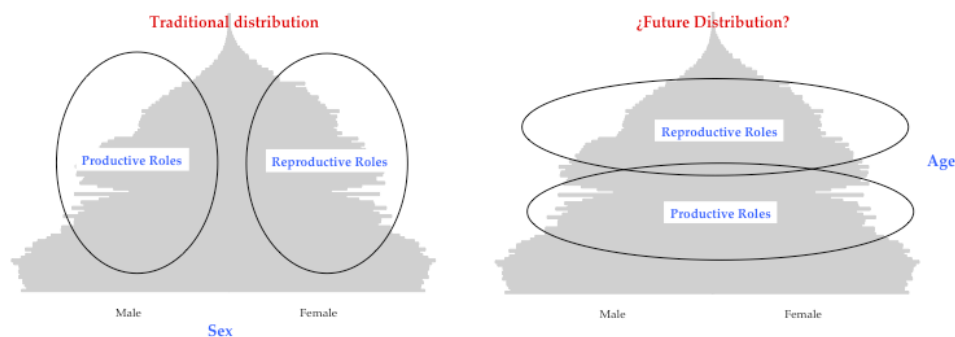
If I have disappointed those who hoped for a new repetition of the usual alarms about the social, political, and economic consequences of population ageing, I hope at least to have been able to explain the reasons. Such alerts are based on predictions that never come true. They are reproduced as part of the "consensus" in the field of demography (O.N.U. 1956), without anyone feeling forced to later explain why they were not right. But in science, errors should serve to review the assumptions and to make different predictions again later. Someone should try to explain sometime why population ageing is almost perfectly correlated with levels of wealth and international wellbeing, and not vice versa. Spain, of course, does not negate this relationship, but quite the opposite: it has only prospered while the proportion of adults went from just 4% a century ago to the current 18% today.

The theory of the reproductive revolution is a good explanation, not just of the change in population dynamics and its consequent effect on the population pyramid, but of the reasons as to why that change is positive and does not cause any of the predicted catastrophes.

In fact, demographic change has enabled greater social and family investment in children, so that human and social capital in Spain has increased dramatically. This has made the economy more productive, and has opened a new and abundant labour pool, women, now much less obligated to perform reproductive tasks. It is not even true that it overloads healthcare systems; it is the changes in consumption patterns and the modernization of systems which explain most of the increase in health spending in developed countries (Dormont, Grignon and Huber, 2006)

Logically, there has not been the ever-announced intergenerational conflict (Arber and Attias-Donfut, 2007) because the ageing of the population does not drive a wedge between the different ages as if they were independent, organized groups fighting for the same resources. Demographic change, however, has consolidated the family and has made it the institution most valued by Spanish youth.

Elsewhere I have speculated on the possible reconfiguration of gender and age roles in a direction that may just be provocative, but I cannot resist showing this graphically here:



Graph 5: Ideal Scheme of Possible Change in the Distribution of Roles by Sex and Age.  
Source: (Pérez Díaz 2003a).

The mere fact that the pyramid has changed and there is a better balance among all ages has also had positive consequences for the productive economy (Gómez and Hernández de Cos, 2006). A profile of more diverse users and consumers makes the markets more stable as opposed to the sectoral crises, and the new old age is opening up consumption and basic service sectors for the Spanish economy and, actually, for all demographically advanced countries, as acknowledged even in the US (Krugman, 2005).

What has been extended has not been old age, but youth. Those born in Spain in the early 20th century began working at an average age of 13 and became adults very soon, and elderly people, too. Today in Spain a 40-year-old person is considered young, and that is directly related to the support and resources transferred by the elders to the youngest, and with the simple fact that they remain alive for many more years. In a country with an underdeveloped welfare state and strongly based on family care, the

growing proportion of people in middle age or early old age has been of great help for other ages. Those are the ages that help in caring for their grandchildren (in the absence of public support in work-family reconciliation, health services, or day care) and also for their older relatives. A new social actor has appeared, therefore, with a growing demographic weight that has opened up new possibilities of relationships and family strategies. Let us not receive it with fear.

**Julio Pérez Díaz** is a Tenured Scientist at the Spanish Council for Scientific Research.

	<b>0-14</b>	<b>15-64</b>	<b>&gt; 64</b>	<b>Total</b>
1900	6,240,701	11,408,535	968,849	18,618,086
1910	6,792,408	12,097,011	1,106,628	19,996,046
1920	6,914,876	13,254,350	1,220,617	21,389,842
1930	7,494,647	14,835,000	1,434,558	23,764,205
1940	7,748,951	16,438,632	1,690,388	25,877,971
1950	7,337,386	18,615,864	2,023,505	27,976,755
1960	8,361,283	19,643,207	2,508,515	30,513,005
1965	8,800,620	20,443,436	2,862,816	32,106,872
1970	9,459,640	21,290,338	3,290,679	34,040,657
1975	9,744,457	22,510,040	3,757,754	36,012,251
1981	9,685,730	23,760,901	4,236,727	37,683,358
1986	8,643,897	25,140,028	4,689,407	38,473,332
1991	7,532,668	25,969,348	5,370,252	38,872,268
1996	6,361,626	27,111,282	6,196,472	39,669,380
2001	5,932,653	27,956,202	6,958,516	40,847,371
2006	6,341,606	30,108,189	7,308,455	43,758,250
2010	6,868,095	31,406,561	7,742,899	46,017,555
2030	6,574,887	29,791,620	11,192,699	47,559,206

Population of Spain from 1900 to 2010. Large age groups (absolute numbers).

Source: INE, Census, Census Registrations and corresponding census renewals.

	<b>0-14</b>	<b>15-64</b>	<b>&gt; 64</b>	<b>(&gt;64)/(&lt;15)</b>
1900	33.5%	61.3%	5.2%	16
1910	34.0%	60.5%	5.5%	16
1920	32.3%	62.0%	5.7%	18
1930	31.5%	62.4%	6.0%	19
1940	29.9%	63.5%	6.5%	22
1950	26.2%	66.5%	7.2%	28
1960	27.4%	64.4%	8.2%	30
1965	27.4%	63.7%	8.9%	33
1970	27.8%	62.5%	9.7%	35
1975	27.1%	62.5%	10.4%	39
1981	25.7%	63.1%	11.2%	44
1986	22.5%	65.3%	12.2%	54
1991	19.4%	66.8%	13.8%	71
1996	16.0%	68.3%	15.6%	97
2001	14.5%	68.4%	17.0%	117
2006	14.5%	68.8%	16.7%	115
2010	14.9%	68.2%	16.8%	113
2030	13.8%	62.6%	23.5%	170

Population of Spain from 1900 to 2010. Large age groups (relative numbers) and relationship between the elderly and children.

Source: INE, Census, Census Registrations and corresponding census renewals.



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Singapore URL: <http://www.kas.de/singapore>

Email: [politics@kas-asia.org](mailto:politics@kas-asia.org)

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